

WHAT IS CLAIMED IS:

1. An image forming apparatus having a latent carrier, a charging device configured to charge a surface of the latent carrier, an exposure device configured to expose a surface of the latent carrier for forming a latent image, and a transfer device provided to transfer a

5 developed toner image on the latent carrier to a recording medium, comprising:

a developing device, the developing having a developer carrier, the developer carrier configured to replenish the developer to the latent carrier;

a pooling portion, the pooling portion configured to pool a two-component developer, the two-component developer including:

10 an agitating device, the agitating device configured to agitate the two-component developer in the pool portion; and

a first measurement device and a second measurement device configured to measure a developer characteristic, wherein the first and second measurement devices compare their respective outputs to measure a deterioration rate of the two-component developer.

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2. The image forming apparatus of Claim 1, wherein the first measurement device is a developer reflection intensity sensor.

3. The image forming apparatus of Claim 1, wherein the second measurement device is a
20 developer magnetic permeability sensor.

4. The image forming apparatus of Claim 1, wherein the second measurement device measures a load driven by the agitating device.

5. The image forming apparatus of Claim 1, wherein the second measurement device measures an electric resistance of the developer.

6. The image forming apparatus of Claim 1, wherein an image forming condition is configured to be changed according to a measured deterioration rate of developer.

7. The image forming apparatus of Claim 6, wherein the image forming condition is a charging bias value of the charging device.

8. The image forming apparatus of Claim 6, wherein the image forming condition is an exposure power of the exposure device.

9. The image forming apparatus of Claim 6, wherein the image forming condition is a developing bias value of the developing device.

10. The image forming apparatus of Claim 6, wherein the image forming condition is a rotating speed of the developer carrier.

11. The image forming apparatus of Claim 6, wherein the image forming conditions are configured to change to negate an affection of deteriorated developer.

12. The image forming apparatus of Claim 1, wherein the developer in the developing device is configured to replace developer according to a measured deterioration rate of the developer.

13. The image forming apparatus of Claim 12, further comprising:
a toner replenishing device, the toner replenishing device configured to provide new toner to the developing device responsive to toner consumption.

5 14. The image forming apparatus of Claim 12, further comprising:
a new developer replenishing device, the new developer replenishing device
configured to provide the new developer to the developing device, wherein the new developer
is proportioned with a magnetic carrier and non-magnetic toner properly;

a discharging device, the discharging device configured to discharge a deteriorated

10 developer;

wherein the new developer replenishing device is configured to provide the new
developer to the developing device after discharging the deteriorated developer by the
discharging device.

15 15. The image forming apparatus of Claim 1, further comprising:
a notice device, the notice device configured to notify the need to replace the
developer in the developing device according to a measured deterioration rate of the
developer.

20 16. The image forming apparatus of Claim 15, wherein the notice device is configured to
show a notice on an operator panel.

17. The image forming apparatus of Claim 15, wherein the notice device is configured to
transmit information to a control center via a communication line.